T. Hawkins 1700
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of)
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EIPEL et al.) Group Art Unit: 1743
)
Serial No. 09/214,868) Examiner: ALEXANDER, L.
)
Filed: January 14, 1999)
)
For: SOLID SUPPORTS FOR ANALYTICAL MEASUREMENT METHODS, THEIR PRODUCTION AND THEIR USE

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REQUEST FOR RECONSIDERATION UNDER 37 CFR 1.116

In response to the Office action of April 10, 2002, applicants request reconsideration in view of the following remarks.

Claims 13-17 and 19-21 stand rejected under 35 U.S.C. 102(b,e) as being anticipated by Goodwin (U.S. 5,284,753) or Rava et al. (U.S. 5,545,531). Claim 18 stands rejected under 35 U.S.C. 103(a) as being anticipated by Goodwin or Rava et al.

Applicants respectfully traverse these rejections. The Examiner has interpreted the claimed non-continuous hydrophobic coating as reading on a coating having hydrophilic test wells. However, the existence of hydrophilic test wells alone would not lead to a discontinuous hydrophobic coating as claimed. As explained in the specification, a non-continuous hydrophobic coating has "discontinuities" which create separate

hydrophobic zones (1) around the measurement zones (2) (see specification page 3, lines 29-32; page 4, lines 16-20; Figures 1-4). In other words, the "discontinuities" and "measurement zones" are different claim elements. In contrast, the cited art does not teach of discontinuities in the coating between the test wells to create separate hydrophobic zones. Also, in particular, the examiner has not indicated how the cited references anticipate claim 14's limitation to "hydrophobic zones in the forms of rings."

Rava et al. discloses a method for making a biological chip plate for the analysis of molecular interactions such as in biological samples (see claim 1 and column 1, lines 7 to 11). Rava et al. further teaches that the chip plates can have 96 wells arranged in 8 rows and 12 columns, such as a standard microliter plate. The probe arrays can each have at least about 100; 1000; 100,000 or 1,000,000 addressable features (see column 2, lines 31 to 36). On said chip, wafers can be scored with waxes, tapes or other hydrophobic material in the spaces between the arrays, forming cells that act as test wells (see column 8, lines 32 to 34). In column 9, a hydrophobic material is also disclosed. According to Figure 4 of Rava et al., said hydrophobic or hydrophilic material is in any case a continuous hydrophobic or hydrophilic coating all over the matrix (wafer). Nothing is suggested in Rava et al. about a non-continuous hydrophobic coating or which would guide the skilled worker to such a non-continuous coating.

Goodwin et al. teaches a simple multi-site chemotaxis test apparatus comprising a membrane filter having areas which hold the fluid on the top and bottom of the filter surface by surface tension (column 2, lines 11 to 14). In addition Goodwin et al. teaches a method wherein surface tension, capillary action, and hydrophobic forces are used to hold suspensions, chemotactic factors, and control fluids in place on both

membrane filters and chemotaxis plates (see abstract and figures 1, 11a-c and 12a-c). Said apparatus or chemotaxis chambers consist of two compartments separated by a filter, with one or both of the compartments open to air. Cells in suspension are placed in the upper compartment, and a chemotactic factor or control are placed in the bottom compartment (see column 1, lines 23 to 28). Cells which have migrated through the filter (or into the filter to a certain depth) are then counted (column 1, lines 42 to 44). Drops of chemotactic factor and drops of control solution(s) are placed on one side of the filter in a well-defined pattern, e.g. 96 spots, 9 mm apart in a 12 x 8 array (conventional micro titer plate). The drops can range in volume from 2 to 75 microliter (column 2, lines 47 to 55). In summary, Goodwin et al. teaches a device for the detection of cell chemotaxis.

As Goodwin's teaching is in an absolutely different scientific area, Goodwin is nonanalagous art that the skilled worker would not have considered when faced with the particular problem with which the present invention is concerned. Even if the skilled worker would have considered the teaching of Goodwin, there is nothing disclosed in Goodwin about a solid support for analytical measurement methods which can be used, for example, for the binding of antibodies to antigens, the interaction between receptors and ligands, the detection of the specific cleavage of substrates by an enzyme etc. (present specification page 7, line 43 to page 8, line 3) as claimed by applicants. There is no suggestion in Goodwin et al. that the chemotaxis apparatus disclosed therein can be used for an analytical measurement method as claimed. Therefore, even a combination of Goodwin et al and Rava et al would not have led the skilled worker to the present invention.

Furthermore, the chemotaxis test apparatus disclosed by Goodwin et al. possesses in any of its embodiments a continuous hydrophobic coating as can be seen from figures 1, 11a-c and 12a-c. In detail, Goodwin et al. discloses in column 9, lines 35 to 50: "The bottom plate 80 has a hydrophobic coating 82 applied to its top surface 91, except at a number of uncoated sites 83. ...The upper component of this embodiment includes a filter 84 surrounded by filter from 81, wherein the top surface 9 of filter 84 and the bottom surface 94 of the filter 84 are covered with a patterned hydrophobic coating 82, as described in the first preferred embodiment of the present invention as shown in FIG. 1." The same is enclosed in Fig. 12a and in column 11, lines 8-11.

In the present invention, applicants claim a solid support which has at least one hydrophilic measurement zone which is separated by at least one non-continuous hydrophobic coating. As the coating in the case of Goodwin and Rava is continuous they cannot render obvious the present invention having a non-continuous hydrophobic coating.

To establish a *prima facie* case of obviousness, three basic criteria must be met. MPEP 2143. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. For the reasons discussed above, applicants urge that none of these criteria have been met.

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Respectfully submitted,
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